

# **EXHIBIT 11**

**IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

<b>WSOU INVESTMENTS, LLC D/B/A</b>	§	
<b>BRAZOS LICENSING AND</b>	§	<b>Case No. 6:20-cv-00953-ADA</b>
<b>DEVELOPMENT,</b>	§	
<i>Plaintiff,</i>	§	<b>JURY TRIAL DEMANDED</b>
	§	
<b>v.</b>	§	
	§	
<b>ONEPLUS TECHNOLOGY</b>	§	
<b>(SHENZHEN) CO., LTD.,</b>	§	
<i>Defendant.</i>	§	

**PLAINTIFF’S AMENDED FINAL DISCLOSURES OF  
PRELIMINARY INFRINGEMENT CONTENTIONS**

Pursuant to the Court’s Order Governing Proceeding – Patent Case (“Order Governing Proceeding”), Plaintiff WSOU Investments, LLC d/b/a Brazos Licensing and Development (“WSOU”) hereby provides its Amended Final Infringements Contentions to defendant OnePlus Technology (Shenzhen) Co., Ltd. (“OnePlus” or “Defendant”) for U.S. Patent No. 8,767,614 (the “614 Patent”).

WSOU makes this disclosure based on the information presently available to it. Discovery in this case has not started, and WSOU reserves its right to amend or supplement these disclosures as permitted by the Federal Rules of Civil Procedure, by the local rules of the Western District of Texas, and by order of the Court, including the Court’s Order Governing Proceedings.

For each Asserted Claim, Plaintiff identifies the following Accused Instrumentalities of which it is currently aware. The identification of Accused Instrumentalities is based on Plaintiff’s research and analysis to date, without the benefit of discovery from the Defendant. Plaintiff reserves the right to add, delete, substitute or otherwise amend this list of Accused

Instrumentalities based on discovery or other circumstances, in a manner consistent with the Federal Rules of Civil Procedures, local rules, and standing orders.

The Accused Instrumentalities include, without limitation, the following:

- OnePlus handsets (including but not limited to OnePlus 7 Pro, 7T, 8, 8 Pro, 8T, 9 5G, 9 Pro 5G, Nord N10 5G, and Nord N100 that support LTE/LTE-A).
- All past, current and future OnePlus products and services that operate in the same or substantially similar manner as the specifically identified products and services above and described in Exhibit 1.
- All past, current and future OnePlus products and services that have the same or substantially similar features as the specifically identified products and services above and described in Exhibit 1.

Plaintiff's infringement contentions apply to the Accused Instrumentalities as well as all other past, current and future hardware and software products and services developed, made, used, offered for sale, sold, imported, and provided by OnePlus that contain or makes use of the Patented Technology.<sup>1</sup>

Based upon publicly available information, WSOU asserts that OnePlus has infringed and/or continues to infringe the patent and claims identified in the attached claim charts (the "Asserted Claims" of the "Patent-in-Suit"). Infringement claim charts evidencing the correspondence between (i) the elements of the Asserted Claims, and (ii) the corresponding items of the accused products are attached hereto. Further, Exhibit 1, which is attached hereto and incorporated by reference, is an exemplary infringement claim chart identifying specifically where

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<sup>1</sup> "Patented Technology" means all technologies described in the claims of the Patent-in-Suit.

each limitation of each Asserted Claim is found within each Accused Instrumentality or practiced by each Accused Instrumentality.

Plaintiff asserts that Defendant has directly infringed and continues to directly infringe the Asserted Claims literally through the Accused Instrumentalities by making, using, offering for sale, and/or selling, or importing into the United States the Accused Instrumentalities. To the extent that Defendant alleges that one or more limitations of the Asserted Claims are not literally found in the Accused Instrumentalities, Plaintiff alleges that such limitations are found in or practiced by the Accused Instrumentalities under the doctrine of equivalents. Any differences alleged to exist between any of the Asserted Claims and any of the Accused Instrumentalities are insubstantial and that each Accused Instrumentality also meets each limitation under the doctrine of equivalents as the identified features of the Accused Instrumentality performs substantially the same function in substantially the same way to achieve substantially the same result as the corresponding claim limitation. WSOU reserves the right to assert infringement solely under the doctrine of equivalents with respect to any particular claim element(s), if warranted by discovery, further analysis, and/or claim constructions in this case.

Accused product	Evidence
OnePlus 7 Pro	<p><b>LTE</b></p> <p>4×4 MIMO, LTE Cat. 18, DL 5CA, UL CA, Supports up to DL Cat18 /UL Cat13 (1.2Gbps /150Mbps), depending on carrier support</p> <p>Source:</p> <p><a href="https://www.oneplus.com/7pro?_ga=2.145228988.926492875.1619697048-934918983.1619697048#/specs">https://www.oneplus.com/7pro?_ga=2.145228988.926492875.1619697048-934918983.1619697048#/specs</a></p>
OnePlus 7T	<p><b>LTE/LTE-A</b></p> <p>4×4 MIMO, LTE Cat. 18, DL 5CA, UL CA, Supports up to DL Cat18 /L Cat13 (1.2Gbps /150Mbps), depending on carrier support</p>

	Source: <a href="https://www.oneplus.com/7t/specs?from=7t">https://www.oneplus.com/7t/specs?from=7t</a>
OnePlus 8	<b>LTE/LTE-A</b> 4×4 MIMO, Supports up to DL Cat 18/UL Cat 13(1.2Gbps /150Mbps), depending on carrier support Source: <a href="https://www.oneplus.com/8/specs?from=8">https://www.oneplus.com/8/specs?from=8</a>
OnePlus 8 Pro	<b>LTE/LTE-A</b> 4×4 MIMO, Supports up to DL Cat 18 / UL Cat 13(1.2Gbps / 150Mbps), depending on carrier support Source: <a href="https://www.oneplus.com/8-pro/specs?from=8pro">https://www.oneplus.com/8-pro/specs?from=8pro</a>
OnePlus 8T	<b>LTE/LTE-A</b> 4×4 MIMO, Supports up to DL Cat 20/UL Cat 18 (2.0Gbps /200Mbps), depending on carrier support Source: <a href="https://www.oneplus.com/8t/specs">https://www.oneplus.com/8t/specs</a>
OnePlus 9	<b>LTE/LTE-A</b> 4×4 MIMO, Supports up to DL Cat 20/UL Cat 18 (2 Gbps /200Mbps), depending on carrier support Source: <a href="https://www.oneplus.com/9/specs">https://www.oneplus.com/9/specs</a>
OnePlus 9 Pro	<b>LTE/LTE-A</b> 4×4 MIMO, Supports up to DL Cat 20/UL Cat 18 ( 1.4Gbps /200Mbps), depending on carrier support Source: <a href="https://www.oneplus.com/9-pro/specs">https://www.oneplus.com/9-pro/specs</a>
OnePlus Nord N10 5G	<b>LTE/LTE-A</b> 4×4 MIMO, Supports up to DL Cat 18/UL Cat 13(1.0 Gbps /150 Mbps), depending on carrier support Source: <a href="https://www.oneplus.com/n10/specs">https://www.oneplus.com/n10/specs</a>
OnePlus Nord N100	<b>LTE/LTE-A</b> Supports up to LTE DL 390 Mbps, depending on carrier support Source: <a href="https://www.oneplus.com/n100/specs">https://www.oneplus.com/n100/specs</a>

Plaintiff further asserts that Defendant has indirectly infringed and continues to indirectly infringe by actively inducing infringement of one or more of the claims of the Asserted Patent through the Accused Instrumentalities. Plaintiff also asserts that these third-parties directly

infringe at least one or more of the claims of the Asserted Patent through the manufacture, use, sale, offer to sell, or importation of the Accused Instrumentalities.

For example, Defendant has actively induced infringement by encouraging the use of the Accused Instrumentalities in ways that infringe each Asserted Claim, including, but not limited through providing instructions to its customers and partners to encourage and instruct the user or partner to utilize the accused product in an infringing manner. Defendant knew or should have known that such encouragement would induce infringement. Defendant has taken active steps with the specific intent to encourage and cause others to use each Accused Instrumentality in ways that infringe each Asserted Claim. Such active steps by Defendant with specific intent to induce infringement have included, among other things, advertising, promoting, marketing, making available for use, offering to sell, and/or selling the Accused Instrumentalities to others; encouraging and influencing others to import, offer to sell, and/or sell the Accused Instrumentalities; directing and instructing others to use the Accused Instrumentalities in infringing ways; and by providing the Accused Instrumentalities to others. OnePlus has performed the aforementioned active steps with the knowledge of the Asserted Patent at least as of the date when the complaint in this case was filed. OnePlus has known or should have known that the acts it has induced constitute infringement because, for instance, it has been aware that end users and resellers will purchase the Accused Instrumentalities will use them, resulting in direct infringement.

Further, for instance, the Accused Instrumentalities are known by Defendant to be especially made or especially adapted for use to infringe the Asserted Patent, and are not staple articles or commodity of commerce suitable for substantial non-infringing uses. Defendant contributes to the infringement of the Asserted Patent by making available for use, offering for

sale, selling, and/or importing the Accused Instrumentalities to third parties, who use the Accused Instrumentalities and/or practice one or more claims of the Asserted Patent. Moreover, Defendant has had notice of the Asserted Patent at least as of the filing of the Complaint in this case.

These Infringement Contentions, including Exhibit 1, are based upon publicly-available information, and Plaintiff's research and analysis to date. The Accused Instrumentalities involve confidential, proprietary designs that are not publicly available, and Defendant has not yet provided discovery. Discovery is ongoing, and Plaintiff anticipates that the subject matter of these infringement contentions will be the subject of expert discovery. Discovery will provide evidence of Defendant's infringement, may lead to the discovery of additional instances of infringement, and may also enable identification of additional claims that are infringed by Defendant. Plaintiff reserves the right to add, delete, substitute, or otherwise further amend these Infringement Contentions based on discovery or other circumstances, in a manner consistent with the Federal Rules of Civil Procedures, local rules, and standing orders. Plaintiff explicitly reserves the right to further modify and/or supplement these contentions with additional or different theories and/or additional or different evidence. Further, WSOU reserves the right to supplement or revise its infringement contentions and/or chart, including identification of additional asserted claims, based on, for example, new versions or variations of one or more of the Accused Instrumentalities that are later discovered.

#### **PRIORITY DATE**

Each of the Asserted Claims of the '614 patent is entitled to a priority date of no later than December 17, 2009. The subject matter described by the Asserted Claims, however, may have been conceived and reduced to practice prior to this date.

WSOU also reserves the right to update its contentions with evidence of an earlier conception and reduction to practice through discovery including identifying any portions of the file history as containing evidence of conception and reduction to practice. Plaintiff's research and analysis is ongoing and Plaintiff reserves the right to assert that the claims are entitled to a priority date that is earlier than the above date.



Dated: October 26, 2021

RESPECTFULLY SUBMITTED,

By: /s/ Jonathan K. Waldrop  
Jonathan K. Waldrop (CA Bar No. 297903)  
(Admitted in this District)  
jwaldrop@kasowitz.com  
Darcy L. Jones (CA Bar No. 309474)  
(Admitted in this District)  
djones@kasowitz.com  
Marcus A. Barber (CA Bar No. 307361)  
(Admitted in this District)  
mbarber@kasowitz.com  
John W. Downing (CA Bar No. 252850)  
(Admitted in this District)  
jdowning@kasowitz.com  
Heather S. Kim (CA Bar No. 277686)  
(Admitted in this District)  
hkim@kasowitz.com  
Jack Shaw (CA Bar No. 309382)  
(Admitted in this District)  
jshaw@kasowitz.com  
**KASOWITZ BENSON TORRES LLP**  
333 Twin Dolphin Drive, Suite 200  
Redwood Shores, California 94065  
Telephone: (650) 453-5170  
Facsimile: (650) 453-5171

Joshua A. Whitehill (NY Bar No. 4766473)  
jwhitehill@kasowitz.com  
(*Pro hac vice* admission)  
Bradley P. Lerman (NY Bar No. 4906079)  
blerman@kasowitz.com  
(*Pro hac vice* admission)  
Howard L. Bressler (NY Bar No. 248379)  
hbressler@kasowitz.com  
(*Pro hac vice* admission)  
**KASOWITZ BENSON TORRES LLP**  
1633 Broadway  
New York, NY 10019  
Telephone: (212) 506-1700  
Facsimile: (212) 506-1800

Mark D. Siegmund (TX Bar No. 24117055)  
mark@swclaw.com  
**STECKLER WAYNE COCHRAN CHERRY  
PLLC**  
8416 Old McGregor Road  
Waco, TX 76712  
Telephone: (254) 651-3690  
Facsimile: (972) 387-4041

**Attorneys for Plaintiff  
WSOU INVESTMENTS, LLC d/b/a  
BRAZOS LICENSING AND  
DEVELOPMENT**

**CERTIFICATE OF SERVICE**

A true and correct copy of the foregoing instrument was served or delivered electronically to all counsel of record, on this 26th day of October, 2021.

/s/ Jonathan K. Waldrop

Jonathan K. Waldrop

**Exhibit 1 to  
WSOU Investments, LLC's  
Amended Preliminary Infringement Contentions**

**Infringement Claim Chart of U.S. Patent No. 8,767,614 (the “Asserted Patent”)**

The Accused Instrumentalities include, without limitation, OnePlus Technology (Shenzhen) Co., Ltd. (“OnePlus” or “Defendant”), OnePlus handsets (including but not limited to OnePlus 7 Pro, 7T, 8, 8 Pro, 8T, 9 5G, 9 Pro 5G, Nord N10 5G, and Nord N100 that support LTE/LTE-A) relating to reporting in a communication system, and more particularly to reporting of buffering information in a communication system; all past, current and future OnePlus products and services that operate in the same or substantially similar manner as the specifically identified products and services; and all past, current and future OnePlus products and services that have the same or substantially similar features as the specifically identified products and services.

WSOU Investments, LLC (“WSOU” or “Plaintiff”) contends that OnePlus, including OnePlus’s employees, directly infringes each of the Asserted Claims, either literally or under the doctrine of equivalents. WSOU also contends that OnePlus has indirectly infringed and continues to indirectly infringe by contributing to and actively inducing infringement of one or more of the Asserted Claims.

WSOU does not intend this exemplary claim chart to be limiting, and WSOU reserves its rights to pursue other accused instrumentalities, patent claims, evidence, and infringement arguments in this case.

Exhibit(s)	Description	Link
Exhibit A	TS 36.300 v 15.2.0	<a href="https://www.etsi.org/deliver/etsi_ts/136300_136399/136300/15.02.00_60/ts_136300v150200p.pdf">https://www.etsi.org/deliver/etsi_ts/136300_136399/136300/15.02.00_60/ts_136300v150200p.pdf</a>
Exhibit B	TS 36.321 v 15.2.0	<a href="https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf">https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf</a>
Exhibit C	OnePlus 7 Pro	<a href="https://www.oneplus.com/7pro?_ga=2.145228988.926492875.1619697048-934918983.1619697048#/specs">https://www.oneplus.com/7pro?_ga=2.145228988.926492875.1619697048-934918983.1619697048#/specs</a>

Claims	OnePlus handsets (including but not limited to OnePlus 7 Pro, 7T, 8, 8 Pro, 8T, 9 5G, 9 Pro 5G, Nord N10 5G, and Nord N100 that support LTE/LTE-A) (The accused products)
<p><b>1Pre.</b> A method comprising:</p> <p><b>1a.</b> sending a buffer information report to a system station from a node for relaying communications between at least one user station and the system station, the report being generated based on a report format used for uplink reporting by a user station; and</p>	<p>The accused products practice a method for sending a buffer information report to a system station from a node for relaying communications between at least one user station and the system station, the report being generated based on a report format used for uplink reporting by a user station; and</p> <p>OnePlus is a smartphone manufacturer based in China. They have released numerous phones and accessories, amongst other products. It is currently majority-owned by Oppo as its only shareholder.</p> <p>OnePlus has released different variants of phones some of them like OnePlus 7 Pro etc. supports LTE/LTE-A and follow standards by 3GPP. See Fig. 1.</p>

**Citation 1: OnePlus 7 Pro Tech Specifications**



**LTE**

4x4 MIMO, LTE Cat. 18, DL 5CA, UL CA, Supports up to DL Cat18 /UL Cat13 (1.2Gbps /150Mbps), depending on carrier support

Fig. 1

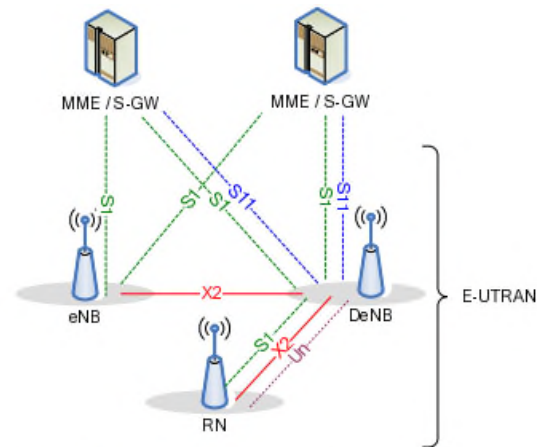
Source: [https://www.oneplus.com/7pro?\\_ga=2.145228988.926492875.1619697048-934918983.1619697048#/specs](https://www.oneplus.com/7pro?_ga=2.145228988.926492875.1619697048-934918983.1619697048#/specs) , Page 1 and Page 2, Last Accessed 30<sup>th</sup> April, 2021, Exhibit C

OnePlus 7 Pro follows 3GPP standards for LTE/LTE-A. 3GPP standard TS 36.300 specifies supports for relaying and the architecture for same is shown in Fig. 2. It also indicates that the functionalities applied for the User station (i.e., OnePlus 7 Pro) are equally applicable to the Relay



node (i.e., RN). The Uplink reporting by user station (i.e., OnePlus 7 Pro) and the buffer status report is of the same format as shown in Fig. 3.

### Citation 2: E-UTRAN Architecture with Relaying



**Figure 4.7.2-1: Overall E-UTRAN Architecture supporting RNs**

Fig. 2

Source:

[https://www.etsi.org/deliver/etsi\\_ts/136300\\_136399/136300/15.02.00\\_60/ts\\_136300v150200p.pdf](https://www.etsi.org/deliver/etsi_ts/136300_136399/136300/15.02.00_60/ts_136300v150200p.pdf), Page 44, Last Accessed on 30th April, 2021, Exhibit A

**Citation 3: Relay Node functionalities**

The objective is to describe the MAC architecture and the MAC entity from a functional point of view. Functionality specified for the UE equally applies to the RN for functionality necessary for the RN. There is also functionality which is only applicable to the RN, in which case the specification denotes the RN instead of the UE. RN-specific behaviour is not applicable to the UE. For TDD operation, UE behaviour follows the TDD UL/DL configuration indicated by *tdd-Config* unless specified otherwise.

Fig. 3

Source:

[https://www.etsi.org/deliver/etsi\\_ts/136300\\_136399/136321/15.02.00\\_60/ts\\_136321v150200p.pdf](https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf), Page 13, Last Accessed on 30th April, 2021, Exhibit B

The relay node (RN) (e.g., a user equipment operating as a relay node) supports communication from other User Equipments (UEs) and for the E-UTRAN system stations. See Fig. 4

**Citation 4: Relay Node**

The RN includes both types of MAC entities; one type for communication with UEs and one type for communication with the E-UTRAN.

Fig. 4

Source:

[https://www.etsi.org/deliver/etsi\\_ts/136300\\_136399/136300/15.02.00\\_60/ts\\_136300v150200p.pdf](https://www.etsi.org/deliver/etsi_ts/136300_136399/136300/15.02.00_60/ts_136300v150200p.pdf), page 13, Last Accessed on 30<sup>th</sup> April, 2021, Exhibit A

Buffer Status reporting (i.e., Buffer information report) by the user equipment acting as a relay node (i.e., OnePlus 7 Pro) serve eNB (i.e., system Station) by providing the information about the data available for transmission (relayed from another user station) in the uplink buffers associated with the MAC entity (i.e., communication between a user station and a system station). See Fig. 5.

As an example, the accused product(s) may operate as a relay node (e.g., OnePlus 7 Pro/accused product operating as Relay node) to relay communication between a user station (e.g., another OnePlus 7 pro/user equipment) and an eNB (i.e., system station) and provides the information about the relaying data waiting to be transmitted in the uplink buffers to the eNB.

### **Citation 5: Buffer Status Report**

#### **5.4.5 Buffer Status Reporting**

The Buffer Status reporting procedure is used to provide the serving eNB with information about the amount of data available for transmission in the UL buffers associated with the MAC entity. RRC controls BSR reporting by configuring the three timers *periodicBSR-Timer*, *retxBSR-Timer* and *logicalChannelSR-ProhibitTimer* and by, for each logical channel, optionally signalling *logicalChannelGroup* which allocates the logical channel to an LCG [8].

Fig. 5

	<p>Source:</p> <p><a href="https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf">https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf</a>, Page 48, Last Accessed on 30th April, 2021, Exhibit B</p>
<p><b>1b.</b> sending an indication to the system station that the node for relaying has different buffering capabilities than the user station.</p>	<p>The accused products practice standards that supports sending an indication to the system station that the node for relaying has different buffering capabilities than the user station.</p> <p>The user equipment acting as a relay node (i.e., OnePlus 7 pro) sends the Buffer Status report and the Buffer Status report fields contain different parameters like buffer size, LCG ID and a parameter called extendedBSR-Size (i.e., increase in the length of the buffer size field) that can be used as an indication for relay node has different buffering capabilities than the user station (i.e., user equipment/OnePlus 7 Pro not acting as a relay node). See Fig. 6 and Fig. 7.</p> <p style="text-align: center;"><b>Citation 6: Fields in Buffer Status Report</b></p>

The fields LCG ID and Buffer Size are defined as follow:

- LCG ID: The Logical Channel Group ID field identifies the group of logical channel(s) which buffer status is being reported. The length of the field is 2 bits. For NB-IoT, the LCG ID is set to #0.
- Buffer Size: The Buffer Size field identifies the total amount of data available across all logical channels of a logical channel group after all MAC PDUs for the TTI have been built. The amount of data is indicated in number of bytes. It shall include all data that is available for transmission in the RLC layer and in the PDCP layer; the definition of what data shall be considered as available for transmission is specified in [3] and [4] or [17] respectively. The size of the RLC and MAC headers are not considered in the buffer size computation. The length of this field is 6 bits. If *extendedBSR-Sizes* is not configured, the values taken by the Buffer Size field are shown in Table 6.1.3.1-1. If *extendedBSR-Sizes* is configured, the values taken by the Buffer Size field are shown in Table 6.1.3.1-2.

Fig. 6

Source:

[https://www.etsi.org/deliver/etsi\\_ts/136300\\_136399/136321/15.02.00\\_60/ts\\_136321v150200p.pdf](https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf), page 82, Last Accessed on 30th April, 2021, Exhibit

Citation 7: Buffer Status Report

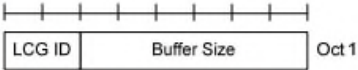


Figure 6.1.3.1-1: Short BSR and Truncated BSR MAC control element

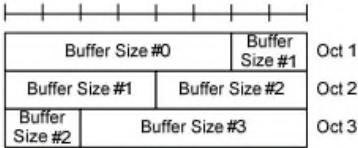


Figure 6.1.3.1-2: Long BSR MAC control element

Fig. 7

Source:

[https://www.etsi.org/deliver/etsi\\_ts/136300\\_136399/136321/15.02.00\\_60/ts\\_136321v150200p.pdf](https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf), Page 83, Last Accessed on 30th April, 2021, Exhibit B

Buffer Status Report (BSR) has different levels or buffer sizes some of them are shown in Fig. 8, In extended buffer size levels for BSR that is used for indicating information to the system station has different buffer size values as shown in Fig. 9.

#### Citation 8: Buffer Size levels for BSR

**Table 6.1.3.1-1: Buffer size levels for BSR**

Index	Buffer Size (BS) value [bytes]	Index	Buffer Size (BS) value [bytes]
0	BS = 0	32	1132 < BS <= 1326
1	0 < BS <= 10	33	1326 < BS <= 1552
2	10 < BS <= 12	34	1552 < BS <= 1817
3	12 < BS <= 14	35	1817 < BS <= 2127
4	14 < BS <= 17	36	2127 < BS <= 2490
5	17 < BS <= 19	37	2490 < BS <= 2915
6	19 < BS <= 22	38	2915 < BS <= 3413
7	22 < BS <= 26	39	3413 < BS <= 3995

Fig. 8

	<p>Source:</p> <p><a href="https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf">https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.p</a> <a href="#">df</a>, Page 84, Last Accessed on 30th April, 2021, Exhibit B</p> <p><b>Citation 9: Extended Buffer Size Levels for BSR</b></p>
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**Table 6.1.3.1-2: Extended Buffer size levels for BSR**

Index	Buffer Size (BS) value [bytes]	Index	Buffer Size (BS) value [bytes]
0	BS = 0	32	4940 < BS ≤ 6074
1	0 < BS ≤ 10	33	6074 < BS ≤ 7469
2	10 < BS ≤ 13	34	7469 < BS ≤ 9185
3	13 < BS ≤ 16	35	9185 < BS ≤ 11294
4	16 < BS ≤ 19	36	11294 < BS ≤ 13888
5	19 < BS ≤ 23	37	13888 < BS ≤ 17077
6	23 < BS ≤ 29	38	17077 < BS ≤ 20999
7	29 < BS ≤ 35	39	20999 < BS ≤ 25822

Fig. 9

Source:

[https://www.etsi.org/deliver/etsi\\_ts/136300\\_136399/136321/15.02.00\\_60/ts\\_136321v150200p.pdf](https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf), Page 85, Last Accessed on 30th April, 2021, Exhibit B

**2.** A method as claimed in claim 1, wherein the indication comprises an indication that the buffer size of the node for relaying is extended from that of the user equipment and

The accused products practice a method wherein the indication comprises an indication that the buffer size of the node for relaying is extended from that of the user equipment and information of the size of the extension.

The user equipment acting as a relay node (i.e., the accused products) sends the Buffer Status Report (BSR) to the system station. The BSR includes the Buffer Size field, which identifies the total amount of data available across all logical channels of a logical channel group. The buffer size can take values from either a default buffer size level table or an extended buffer size level



information of the size of the extension.

table. The “extendedBSR-Sizes” parameter is used to indicate whether the buffer size of the relay node (i.e., user equipment acting as a relay node) has extended buffer capability than a user equipment (e.g., another user station). See Fig. 10.

### Citation 10: Buffer Size field and extendedBSR-Sizes parameter

The fields LCG ID and Buffer Size are defined as follow:

- LCG ID: The Logical Channel Group ID field identifies the group of logical channel(s) which buffer status is being reported. The length of the field is 2 bits. For NB-IoT, the LCG ID is set to #0.
- Buffer Size: The Buffer Size field identifies the total amount of data available across all logical channels of a logical channel group after all MAC PDUs for the TTI have been built. The amount of data is indicated in number of bytes. It shall include all data that is available for transmission in the RLC layer and in the PDCP layer; the definition of what data shall be considered as available for transmission is specified in [3] and [4] or [17] respectively. The size of the RLC and MAC headers are not considered in the buffer size computation. The length of this field is 6 bits. If *extendedBSR-Sizes* is not configured, the values taken by the Buffer Size field are shown in Table 6.1.3.1-1. If *extendedBSR-Sizes* is configured, the values taken by the Buffer Size field are shown in Table 6.1.3.1-2.

Fig. 10

Source:

[https://www.etsi.org/deliver/etsi\\_ts/136300\\_136399/136321/15.02.00\\_60/ts\\_136321v150200p.pdf](https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf), Page 82, Last Accessed on 30th April, 2021, Exhibit B

If the extendedBSR-Sizes parameter is configured, the values taken by the Buffer Size field are “extended” compared to the default buffer size level values for BSR. The values of the extended

buffer size levels (i.e., information of the size of the extension) are known using the extended buffer size level table for BSR. See Fig. 11 and Fig. 12.

### Citation 11: Default Buffer Size Levels for BSR

**Table 6.1.3.1-1: Buffer size levels for BSR**

Index	Buffer Size (BS) value [bytes]	Index	Buffer Size (BS) value [bytes]
0	BS = 0	32	1132 < BS <= 1326
1	0 < BS <= 10	33	1326 < BS <= 1552
2	10 < BS <= 12	34	1552 < BS <= 1817
3	12 < BS <= 14	35	1817 < BS <= 2127
4	14 < BS <= 17	36	2127 < BS <= 2490
5	17 < BS <= 19	37	2490 < BS <= 2915
6	19 < BS <= 22	38	2915 < BS <= 3413
7	22 < BS <= 26	39	3413 < BS <= 3995

Fig. 11

Source:

[https://www.etsi.org/deliver/etsi\\_ts/136300\\_136399/136321/15.02.00\\_60/ts\\_136321v150200p.p](https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf)

[df](https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf), Page 84, Last Accessed on 30th April, 2021, Exhibit B

**Citation 12: Extended Buffer Size Levels for BSR****Table 6.1.3.1-2: Extended Buffer size levels for BSR**

Index	Buffer Size (BS) value [bytes]	Index	Buffer Size (BS) value [bytes]
0	BS = 0	32	4940 < BS ≤ 6074
1	0 < BS ≤ 10	33	6074 < BS ≤ 7469
2	10 < BS ≤ 13	34	7469 < BS ≤ 9185
3	13 < BS ≤ 16	35	9185 < BS ≤ 11294
4	16 < BS ≤ 19	36	11294 < BS ≤ 13888
5	19 < BS ≤ 23	37	13888 < BS ≤ 17077
6	23 < BS ≤ 29	38	17077 < BS ≤ 20999
7	29 < BS ≤ 35	39	20999 < BS ≤ 25822

Fig. 12

Source:

[https://www.etsi.org/deliver/etsi\\_ts/136300\\_136399/136321/15.02.00\\_60/ts\\_136321v150200p.pdf](https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf), Page 85, Last Accessed on 30th April, 2021, Exhibit B

**4.** A method as claimed in claim 1, wherein the buffer information report

The accused products practice a method wherein the buffer information report comprises a medium access control control element.

<p>comprises a medium access control control element.</p>	<p>The user equipment acting as a relay node (i.e., OnePlus 7 Pro) sends the Buffer Status Report (BSR) to the system station using a BSR Medium Access Control (MAC) control element. The BSR MAC control elements consist of short BSR, truncated BSR, or long BSR format. See Fig. 13.</p> <p style="text-align: center;"><b>Citation 13: BSR MAC Control Element</b></p> <p><b>6.1.3.1 Buffer Status Report MAC Control Elements</b></p> <p>Buffer Status Report (BSR) MAC control elements consist of either:</p> <ul style="list-style-type: none"> <li>- Short BSR and Truncated BSR format: one LCG ID field and one corresponding Buffer Size field (figure 6.1.3.1-1); or</li> <li>- Long BSR format: four Buffer Size fields, corresponding to LCG IDs #0 through #3 (figure 6.1.3.1-2).</li> </ul> <p style="text-align: center;">Fig. 13</p> <p style="text-align: center;">Source:</p> <p style="text-align: center;"><a href="https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200.pdf">https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200.pdf</a>, Page 82, Last Accessed on 30th April, 2021, Exhibit B</p>
<p><b>5.</b> A method as claimed in claim 1, comprising separate signalling of said indication</p>	<p>The user equipment acting as a relay node (i.e., OnePlus 7 Pro) sends the Buffer Status Report (BSR) to the system station. The buffer size can take values from either a default buffer size level table or an extended buffer size level table. The “extendedBSR-Sizes” parameter is used to</p>

in a radio resource control message or an admission control message and the buffer information report in a medium access control message.

indicate to the system station whether the buffer size of the user equipment (which is acting as a relay node) is extended. See Fig. 14.

#### **Citation 14: extendedBSR-Sizes parameter**

The fields LCG ID and Buffer Size are defined as follow:

- LCG ID: The Logical Channel Group ID field identifies the group of logical channel(s) which buffer status is being reported. The length of the field is 2 bits. For NB-IoT, the LCG ID is set to #0.
- Buffer Size: The Buffer Size field identifies the total amount of data available across all logical channels of a logical channel group after all MAC PDUs for the TTI have been built. The amount of data is indicated in number of bytes. It shall include all data that is available for transmission in the RLC layer and in the PDCP layer; the definition of what data shall be considered as available for transmission is specified in [3] and [4] or [17] respectively. The size of the RLC and MAC headers are not considered in the buffer size computation. The length of this field is 6 bits. If *extendedBSR-Sizes* is not configured, the values taken by the Buffer Size field are shown in Table 6.1.3.1-1. If *extendedBSR-Sizes* is configured, the values taken by the Buffer Size field are shown in Table 6.1.3.1-2.

Fig. 14

Source:

[https://www.etsi.org/deliver/etsi\\_ts/136300\\_136399/136321/15.02.00\\_60/ts\\_136321v150200p.pdf](https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf), Page 82, Last Accessed on 30th April, 2021, Exhibit B

The user equipment acting as a relay node sends the Buffer Status Report (BSR) to the system station by means of an appropriate BSR Medium Access Control (MAC) control element (i.e., medium access control message). See Fig. 15.

	<p style="text-align: center;"><b>Citation 15: BSR MAC Control Element</b></p> <p><b>6.1.3.1 Buffer Status Report MAC Control Elements</b></p> <p>Buffer Status Report (BSR) MAC control elements consist of either:</p> <ul style="list-style-type: none"> <li>- Short BSR and Truncated BSR format: one LCG ID field and one corresponding Buffer Size field (figure 6.1.3.1-1); or</li> <li>- Long BSR format: four Buffer Size fields, corresponding to LCG IDs #0 through #3 (figure 6.1.3.1-2).</li> </ul> <p style="text-align: center;">Fig. 15</p> <p style="text-align: center;">Source:</p> <p style="text-align: center;"><a href="https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf">https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.p</a>  df, Page 82, Last Accessed on 30th April, 2021, Exhibit B</p>
<p><b>6Pre.</b> An apparatus, comprising:</p> <p><b>6a.</b> means for causing sending of a buffer information report to a system station from a node for relaying communications between at least one user</p>	<p>The accused products implement an apparatus comprising means for causing sending of a buffer information report to a system station from a node for relaying communications between at least one user station and the system station, the report being generated based on a report format used for uplink reporting by a user station.</p> <p><i>Refer to supporting evidence of claim element 1[a].</i></p>

station and the system station, the report being generated based on a report format used for uplink reporting by a user station; and	
<b>6b.</b> means for causing sending of an indication to the system station that the node for relaying has different buffering capabilities than the user station.	<p>The accused products implement an apparatus comprising means for causing sending of an indication to the system station that the node for relaying has different buffering capabilities than the user station.</p> <p><i>Refer to supporting evidence of claim element 1[b].</i></p>
<p><b>13pre.</b> An apparatus, comprising:</p> <p><b>13a.</b> at least one processor; and</p>	<p>The accused products implement an apparatus comprising at least one processor and at least one memory including computer program code, where the at least one memory and the computer program code are configured to, with the at least one processor, cause the apparatus to perform at least the following functions.</p>

<b>13b.</b> at least one memory including computer program code	OnePlus phones include processors and memory with loaded computer program code. By way of an example, OnePlus 7 Pro includes Qualcomm Snapdragon 855 CPU (i.e., processor) and 128/256 GB storage (i.e., memory).
<b>13c.</b> the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following:	Based on information and belief, the OnePlus devices can perform the following functions of sending a buffer status report using the processor and memory.



	<p style="text-align: center;"><b>Citation 16: Processor and Memory in OnePlus 7 Pro</b></p> <p><b>Operating System</b> OxygenOS based on Android™ 9</p> <p><b>CPU</b> Qualcomm® Snapdragon™855 (Octa-core, 7nm, up to 2.84 GHz), with Qualcomm AI Engine</p> <p><b>GPU</b> Adreno 640</p> <p><b>RAM</b> 6GB/8GB/12GB LPDDR4X</p> <p><b>Storage</b> 128GB/256GB UFS 3.0 2-LANE</p> <p style="text-align: center;">Fig. 16</p> <p style="text-align: center;">Source: <a href="https://www.oneplus.com/7pro?_ga=2.145228988.926492875.1619697048-934918983.1619697048#/specs">https://www.oneplus.com/7pro?_ga=2.145228988.926492875.1619697048-934918983.1619697048#/specs</a>, Page 1 and Page 2, Last Accessed 30<sup>th</sup> April, 2021, Exhibit C</p>
<p><b>13d.</b> sending of a buffer information report to a system station from a node</p>	<p>The accused products implement an apparatus wherein the at least one memory and the computer program code are further configured to, with the at least one processor, cause the apparatus to send a buffer information report to a system station from a node for relaying communications</p>

for relaying communications between at least one user station and the system station, the report being generated based on a report format used for uplink reporting by a user station; and	<p>between at least one user station and the system station, the report being generated based on a report format used for uplink reporting by a user station.</p> <p><i>Refer to supporting evidence of claim element 1[a].</i></p>
<b>13e.</b> sending of an indication to the system station that the node for relaying has different buffering capabilities than the user station.	<p>The accused products implement an apparatus wherein the at least one memory and the computer program code are further configured to, with the at least one processor, cause the apparatus to send an indication to the system station that the node for relaying has different buffering capabilities than the user station.</p> <p><i>Refer to supporting evidence of claim element 1[b].</i></p>
<b>14.</b> An apparatus as claimed in claim 13, wherein the at least one memory and the computer program code are further configured to, with the at least one processor,	<p>The accused products implement an apparatus wherein the at least one memory and the computer program code are further configured to, with the at least one processor, cause the apparatus to perform at least the following: process an indication that the buffer size of the node for relaying is extended from that of the user equipment and information of the size of the extension.</p>

<p>cause the apparatus to perform at least the following: process an indication that the buffer size of the node for relaying is extended from that of the user equipment and information of the size of the extension.</p>	<p><i>Refer to supporting evidence of claim element 13[pre] &amp; 2.</i></p>
<p><b>16.</b> An apparatus as claimed in claim 13, wherein the at least one memory and the computer program code are further configured to, with the at least one processor, cause the apparatus to perform at least the following: communicate the indication within the buffer information report.</p>	<p>The user equipment acting as a relay node (i.e., OnePlus 7 Pro) sends the Buffer Status Report (BSR) to the system station. The buffer size can take values from either a default buffer size level table or an extended buffer size level table. The “extendedBSR-Sizes” parameter is used to indicate to the system station whether the buffer size of the relay node (i.e., user equipment/accused products acting as a relay node) is extended. See Fig. 17.</p>

	<p style="text-align: center;"><b>Citation 17: extendedBSR-Sizes parameter</b></p> <p>The fields LCG ID and Buffer Size are defined as follow:</p> <ul style="list-style-type: none"> <li>- LCG ID: The Logical Channel Group ID field identifies the group of logical channel(s) which buffer status is being reported. The length of the field is 2 bits. For NB-IoT, the LCG ID is set to #0.</li> <li>- Buffer Size: The Buffer Size field identifies the total amount of data available across all logical channels of a logical channel group after all MAC PDUs for the TTI have been built. The amount of data is indicated in number of bytes. It shall include all data that is available for transmission in the RLC layer and in the PDCP layer; the definition of what data shall be considered as available for transmission is specified in [3] and [4] or [17] respectively. The size of the RLC and MAC headers are not considered in the buffer size computation. The length of this field is 6 bits. If <i>extendedBSR-Sizes</i> is not configured, the values taken by the Buffer Size field are shown in Table 6.1.3.1-1. If <i>extendedBSR-Sizes</i> is configured, the values taken by the Buffer Size field are shown in Table 6.1.3.1-2.</li> </ul> <p style="text-align: center;">Fig. 17</p> <p style="text-align: center;">Source:</p> <p style="text-align: center;"><a href="https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf">https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf</a>, Page 82, Last Accessed on 30th April, 2021, Exhibit B</p> <p style="text-align: center;"><i>Refer to supporting evidence of claim element 13[pre].</i></p>
<p><b>17.</b> An apparatus as claimed in claim 16, wherein the buffer information report comprises a buffer status</p>	<p>The user equipment acting as a relay node (i.e., OnePlus 7 Pro) sends a Buffer Status Report (BSR) to the system station, which is used to provide the system station with information about the amount of data available for transmission in the uplink buffers of the relay node (i.e., user equipment/accused products acting as a relay node). See Fig. 18.</p>

report and said indication is included into an extension of the buffer status report.

### Citation 18: Buffer Status Report

#### 5.4.5 Buffer Status Reporting

The Buffer Status reporting procedure is used to provide the serving eNB with information about the amount of data available for transmission in the UL buffers associated with the MAC entity. RRC controls BSR reporting by configuring the three timers *periodicBSR-Timer*, *retxBSR-Timer* and *logicalChannelSR-ProhibitTimer* and by, for each logical channel, optionally signalling *logicalChannelGroup* which allocates the logical channel to an LCG [8].

Fig. 18

Source:

[https://www.etsi.org/deliver/etsi\\_ts/136300\\_136399/136321/15.02.00\\_60/ts\\_136321v150200p.pdf](https://www.etsi.org/deliver/etsi_ts/136300_136399/136321/15.02.00_60/ts_136321v150200p.pdf), Page 48, Last Accessed on 30th April, 2021, Exhibit B

*Refer to supporting evidence of claim element 13[pre].*